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ABSTRACT

Education is both a service enterprise and a product enterprise. Each view has direct bearing on the program structure that ties budget, accounting, and reporting data into classification matrices capable of computerized analysis. Service is defined as an activity or as a tangible object delivered to a specified client. An educational product is a measure of impact of educational service on a client. Productivity is defined as the quantitative measure of either a service delivered or an outcome (product) achieved for a client within a specified period. Four major areas where the distinction of viewing education from the two perspectives of service and of product has direct implication for fiscal analysis are budgeting, accounting, fiscal reporting, and in economic analysis of education. Whether education is viewed as a service enterprise or as a product enterprise also has considerable impact on the conclusions drawn concerning productivity. More importantly, public policy decisions in the area of educational finance could be more sharply focused if the service-product distinction were used in the deliberations. (Author/MLP)

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FINANCIAL IMPLICATIONS IMBEDDED IN VIEWS OF EDUCATION AS A SERVICE ENTERPRISE AND AS A PRODUCT ENTERPRISE

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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John B. Peper

The accountability movement has forced greater attention on the analytic process in educational finance than any other reform movement in the recent history of education. Analysis is used in this paper as an inclusive term covering a range of activities between analysis of functional issues such as cost comparison studies to the more theoretical studies of economic benefits in education. More particularly, analysis in this paper is used to focus on the interdependent problems of budgeting, accounting, financial reporting and on certain aspects of economic analysis.

Inability to define program structure adequately has rendered many forms of analysis weak, if not entirely meaningless. This problem was inherent in the ill-fated experiment with zero based budgeting of the Department of Agriculture in the early 1960's. Not all professionals see this problem the same way. Many accountants maintain that it is possible to provide cost data for any function, program or outcome directly from their object/function expenditure reports. They tend to add a qualifier. The qualifier is that if the client can define the account structure, cost data can be provided. Analysts of educational policy generally believe that this response begs the question. They wish to be able to have a flexible account structure which permits rapid responses

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to questions concerning costs of learning, comparative operating costs, and predictions of future expenditures.

To illustrate this problem from an administration position, assume that it would be desirable to assign fiscal resources to functional management classifications within a school system. The program structure might include classifications such as 'instruction,' 'administration,' and 'supervision.' To provide a meaningful analysis structure each program would need not only to identify expenditures by objects, but identification would need to extend to client specification, function specification, delivery unit definition, unit of cost, and to specification of intended client outcomes. To further complicate the process, suppose that a fourth program called 'staff development' were injected into the model. The complexity of this effort, coupled with the unsettling political conflict within an organization which undertakes development of such a system, causes many first attempts at program budgeting to go irreparably awry.

I wish to bring attention in this paper to an issue which is imbedded in the development of a program structure and which, if it remains unresolved, prohibits the subsequent development of a program structure. It is, after all, the program structure which ties budget data, accounting data, and reporting data into clasification matrices capable of computerized analysis.

In development of the program structure for an educational organization the design of the program structure can be facilitated by addressing a profound question in a practical way. What do we mean by education? The response can be simplified. Education is both a <u>service</u> enterprise and also

a product enterprise. Each view has direct bearing on the program structure problem.

In an article "PPBS and Education an Uncharted Isomorphism," it was argued that education should be viewed solely as a service enterprise. This position was supported by the belief that social and governmental institutions can only be held accountable for services to clients and not for what happens to clients as a result of services delivered.[1] In a subsequent article, a basis for applying both qualitative and quantitative factors to the measurement of service in education was proposed. The resultant equation could yield a "service unit index" which would give a basis for evaluating an institution on qualitative and quantitative service factors within a given time period.[2] However, the social mood of the times did not permit total disregard of the persistent questions -- What about the impact of services? Isn't a teacher responsible for learning outcomes as well as for delivering lessons?

During the interval between 1972 and 1976 PPBS has fallen on bad times, but accountability has not. Why did PPBS fail? Kirst[3] cited the causes as (1) political opposition from the California English teachers whose members asserted that it was impossible to specify meaningful goals for English; and (2) political opposition from the United Republicans of California who favored a bottoms-up budget development, and who saw PPBS as a centralized top down process.

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1. John B. Peper, "PPBS and Education and Uncharted Isomorphism," PPBS Users Newsletter, Volume I, No. 1, Philadelphia Public Schools, April, 1972, pp. 1-3.

2. John B. Peper, "Proposal for a Service Unit Index," PPBS Users Newsletter, Volume I, No. 2, Philadelphia Public Schools, June, 1972, pp. 2-4.

3. Michael W. Kirst, "The Rise and Fall of PPBS in California," Phi Delta Kappa, Volume LVI, No. 8, April, 1975, pp. 535-538.

More importantly, PPBS failed in Kirst's opinion because its implementation evoked direct competition among three perspectives on the nature of education; namely, the industrial, the behavioristic and the biological.

The industrial perspective advocates productivity and efficiency; the behavioristic perspective emphasizes scientific and psychological indicators; and the biological perspective favors inter-personal and affective processes and it minimizes the importance of quantification. This competition, once evoked through PPBS, was irreconcilable within the system. Therefore, PPBS became, in part, the victim of a self-provoked controversy. This controversy was due in large measure to lack of clarity about how education was to be analyzed. Many clients, by implication, were advocating an outcome view. Many others, particularly professional educators, were more inclined toward a view of education as art, profession or service, but they were uncomfortable with a view of education as product. The distinctions were not specified in this way, however. One writer analyzed the failure of PPBS as, in part, attributable to a total lack of clarity in definition and in specified procedures. Wildavsky devoted an entire chapter to the topic, "Why PPBS Fails." He attributes the failure to a single cause which he calls THE REASON in capital letters.

> Program budgeting cannot be stated in operational terms. No one can agree about what the words mean, let alone show another person what to do. The reason for the difficulty is that telling an agency to adopt program budgeting means telling it to find better policies and there is no formula for doing that. One can (and should) talk about measuring effectiveness, estimating costs, and comparing alternatives -- but, what a far cry from being able to take the creative leap to making better policy.[4]

4. Aaron Wildavsky, Budgeting: A Comparative Theory of Budgetary Processes, Waltham, MA: Little, Brown and Company, 1975, p. 359.

Despite the failure of zero based budgeting and failures of PPBS, we cannot return to the days of function-object class accounting and expenditure-by-management-unit budget development. For one reason, the United States Office of Education's Handbook II, which requires a rudimentary program structure for Federal reporting, is being adopted by several states as a uniform method for financial reporting. Furthermore, cities such as Los Angeles have invested large sums in computerized accounting and reporting systems. Secondly, the general public today has no less a desire to know what the impact of expenditures should be than it did in 1970 when Russell Peterson, then Governor of Delaware, addressed the July meeting of the Education Commission of the States. Peterson voiced a widely held sentiment.

> Educators traditionally think in terms of inputs -- new programs, more dollars for materials, higher teacher salaries and the like... In principle, the American commitment has been that every child should have an adequate education... When a child failed to learn, school people all too often labeled him 'slow,' 'unmotivated,' or 'retarded.' Our schools must assume the commitment that every child shall learn...[5]

A definite need exists in educational finance for better analytic structures. The proposal which follows is one approach to improving the analytic process through better definition of accounting and program structures.

Improving the Definitions in Education Program Structure

Education as Service

To design a program structure in education one might begin with the view that education is a service enterprise. At this point it may be helpful to define service more precisely. Service is defined as an activity or as a tangible object delivered to a specified client. This definition permits a further distinction between direct service and indirect service. The following

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5. Russell W. Peterson, (Speech) Education Commission of the States Annual Meeting, Denver, Colorado, July, 1970.

list exemplifies possible service classifications:

Activities	Tangible Objects
Teaching	Books
Coaching	Reports
Counseling	Facilities
Administering	Meals
Feeding	Supplies
Entertaining	Equipment

These may then be grouped, if desired, under programs such as reading, humanities, or science education. They may be meaningful as first order groupings in their own right.

Education as Product

A further view of education is possible; namely, education is a product enterprise. Generally speaking, education does not produce tangible objects in the sense of automobiles, television sets or electric toasters. To view education as a product enterprise requires a special usage of the word product. When I hear citizens speak of educational products, they usually have reference to some result or effect or outcome on a client after having received an educational service. I would, therefore, offer the following definition of educational product. An educational product is a measure of impact of educational service on a client.

Using this definition of educational product, the following listing of educational outcomes are examples of educational products:

Learning scores
Attitude measures
Social behavior statistics
Psychological measures
Physical fitness indices
Organizational climate measures
Earnings in dollars
Measured ability to govern
Job satisfaction measures
Hours spent in recreational activities

If education is to be viewed as a product enterprise it is necessary that each product measure be functionally related to services within the structure as defined here. Since the relationship between product and service would always remain somewhat arbitrary, it is conceivable that the aggregation of services related to a product would be incomplete and in most cases would always be insufficient to permit 100% attribution. Therefore, the view of education as a product enterprise will remain for some time to come a science of "best approximation" or an incomplete quasi-science.

Productivity

One may reasonably ask in this schema and at this point what about productivity. Interestingly, it is possible within the procedures offered herein to derive alternate and equally useful measures of productivity. This may be the major contribution of the service/product distinction. Productivity is defined as the quantitative measure of either a service delivered or of an outcome (product) achieved for a client within a specified period.

An example of how this definition works, taken from the field of health care, may prove helpful. Conceptually, the criterion in a production function study of the delivery of health care could as readily be 'patients treated per day' as it could be 'patients cured per day.' Each has intellectual and practical utility.

Implications

There was a certain tantalizing promise in the title of this paper that implications of viewing education from the two perspectives of service and of product would be offered. Four major areas where this distinction has direct

implication for fiscal analysis are budgeting, accounting, fiscal reporting and in economic analysis of education.

Budgeting

Budgeting has four procedures which would be directly affected by different perspectives on education. They are (1) revenue prediction, (2) expenditure estimation, (3) adoption procedures, and (4) control decisions.

Revenue prediction. Revenue prediction may well be enhanced by careful specification of services if the resources are closely tied to service categories. Most states provide some financial aid to support categorically defined services. For example, districts which provide services to handicapped children in Wisconsin become eligible for reimbursement of 70% of personnel expenditures. Few revenue resources are provided solely on the basis of impact or product as used in this paper. One notable exception was performance contracting. This effort was short-lived and may well have been introduced before the technology was available for making the concept practical to implement. There is, therefore, at present little utility in calculating product indicators for prediction of revenue.

Expenditure estimation. Expenditure estimation is enhanced by precise definitions of service in that justification is more easily understood in terms of service units than in terms of function or object class codes. Product definitions on the opposite side of the ledger have little utility in expenditure estimation.

Adoption procedures. Adoption procedures rely heavily on convincing justification of need for expenditures and on the relative ease with which revenues can be raised. Therefore, service indicators are necessary and product

indicators could assist in the demand side of budgeting. Even negative product indicators could become convincing justification of the need for more revenues or alternative allocation policies.

Control decisions. Control decisions, or who gets to spend how much, are greatly assisted by having an adequate justification of the demand for specified services. At times productivity indices can be used to alter the demand arena to alternative control decisions.

Accounting

Accounting implications which flow from the distinction between education as a service and as a product fall into five headings. They are (1) account structure, (2) cash flow, (3) control documents, (4) cross-walk matrices, and (5) degree of centralization in accounting and management responsibility centers.

Account structure. The account structure of an organization, if classified by service categories, represents an improvement over function/object account structures in that other aspects of fiscal management are greatly facilitated. The management structure can readily be displayed, budgeting can be more convincingly achieved and computerized fiscal studies would be more easily managed if the accounting system were organized by service categories. Conversely, account structures organized by product categories are extremely laborious to design and to maintain. At present, their value is in practical terms not sufficient to justify the effort and the cost.

Cash flow. Accounting for the flow of cash within an organization is greatly assisted by being able to know precisely which service areas create surpluses and deficits and which areas can be used to serve as resevoirs. For example, 'summer school' as a service account classification, can create a revenue surplus for 10 months and it would then create a peak load expenditure for two months. Product accounting does not have direct applicability, in my estimation, to cash flow accounting.

Control documents. Control documents such as purchase orders and supply requisitions are meaningfully analyzed by service classifications, particularly if the service classifications are identical to the management structure and to the financial responsibility centers. Product accounting structures have little if any applicability to control document analysis.

Crosswalks. Charts of accounts or crosswalk matrices between different account structures are maps between revenues, expenditures and organizational structures. Service categories simplify the mapping, while product categories complicate and obscure lines between objects and expenditures and between revenue units and expenditure categories. Program definition is essential to useful crosswalk matrices.

Centralization. The degree of centralization with respect to the kinds of unit decisions made with respect to financial accounts is neutral with respect to classifications of service and product. Accounts may be classified any number of ways and controlled at either a transaction level, an individual level or at a unit level without reference to service or product. It is possible, however, that decentralization would be impossible without some form of service unit definition provided in the account structure.

Financial Reporting

Five reporting classifications are identified for analysis of the service-product distinction as a way of viewing education. They are (1) accounting reports, (2) budgets, (3) audits, (4) cash reports, and (5) accomplishment reports.

In each of the five kinds of financial reports, service indicators are definite improvements over function-object reporting units. Where possible, accomplishment reports which contain categories indicating products as well as services form a useful basis for determining the impact of an organization. There is a considerable need, at present, to delineate how expenditures impact clients. This kind of reporting may be accomplished in a generic way quite apart from the accounting and budgetary coding structures.

Economic Analysis

Three examples of economic analysis were chosen for illustrative purposes only in drawing a further implication of the use of the service-product distinction in studies of educational finance. The three areas are (1) production studies, (2) cost-benefit analysis, and (3) manpower utilization studies.

Productivity may both be reported as service and as product delivery. Each method has utility. At the risk of over simplification, it is occasionally helpful to be able to say that $1,000,000 will purchase a fundamental knowledge of reading and mathematics for 158 children in six years. Cost-benefit studies, therefore, can both be expressed in service units and in product units. Manpower studies would primarily be generated around

service categories verus product units. It, of course, would be desirable to be able to say that 25 teachers and 10 other personnel were able to bring about 5 units of learning for 625 children at a rate of one-half the expected time at a rise of only 20% more cost. We simply are not able to do so at present.

It is in the field of economic analysis of education that I think the distinction I have drawn in this paper has particular merit. Whether education is viewed as a service enterprise or as a product enterprise has considerable impact not only on the way we budget, do accounting, report on the fiscal status of an institution, but also on the conclusions we are able to draw concerning our productivity. More importantly, public policy decisions in the area of educational finance could be more sharply focussed if the service-product distinction were used in the deliberations.